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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/414,004	10/07/1999	VICTOR KATSAP	2925-0411P	2693

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HITT GAINES, PC
AGERE SYSTEMS INC.
PO BOX 832570
RICHARDSON, TX 75083

EXAMINER

VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/414,004	Applicant(s) KATSAP ET AL.	
	Examiner David A. Vanore	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-50, 52, 53, 55-67, 69 and 70 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 41-50, 52, 53, 55-67, 69 and 70 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on February 2, and 8, 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 7-10 of the response, filed September 19, 2005, with respect to the rejection(s) of claim(s) 41-42, 47, 58-59, and 64 under 35 USC §102 and claims 43-46, 48-50, 52-53, 55-57, 60-63, 65-67, and 69-70 under 35 USC §103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 35 USC § 101.

2. Applicant has amended independent claims 41 and 58 to further require that the drift space containing a lens array required in the independent claims be free of electric field lines and gradients. This limitation is not apparently present in the previously recited prior art, where specifically the grid (23) is located proximate to a cathode and not apparently in an electron drift region. Since the cathode 23 in the prior art generates the electric field for electron emission, it is apparent that the grid in the previously relied upon reference is immersed in an electric field generated by said cathode, and reflected in the geometry of the grid, which is curved to fit an equipotential surface of said field. Therefore, as the claims currently read, the Clerc reference (USPN 5,936,335) fails to teach or suggest all the required limitations as currently presented, pointed out by the applicant at pages 7-10 of the response.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 41-50, 52-53, 55-67, and 69-70 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

5. The independent claims 41 and 58, upon which all remaining claims depend, have been amended in reply to further include the limitations:

“...the drift space being a region that, during operation, is substantially free of electric field lines/gradients such that motion of electrons in the electron beam are not altered when electrons pass through the drift space.”

6. This limitation internally contradicts that which is previously required in the claim.

7. Firstly, the lens array is located in the drift space of the exposure tool and is impinged upon by the electron beam “...for splitting the electron beam into a plurality of sub beams...”, as recited in claim 41, and similarly in claim 58. A beam of electrons cannot be split without affecting the motion of some or all of the electrons constituting the beam prior to impingement on the lens array required in the claims.

8. Secondly, the specification at page 4 sets forth that for the lens array to function, an electrostatic potential U_m is applied to the array. The drift space is therefore not a field free space, and the function of the lens array requires application of a potential to an element located inside the drift space.

9. Claims 41 and 58, and their associated dependent claims, are therefore internally contradictory and recite limitations which would render the device inoperable. The examiner further notes that the specification at page 4 further recites that a magnetic field may be present in the drift region which raises two questions.

10. Firstly, since an electric field is an essential component of a magnetic field, how is a magnetic field consistent with the current claim language.

11. Secondly, the claim requires that the motion of the electrons is not altered in the drift space, but the motion of a charged particle in a magnetic field causes a force to be exerted on said charged particle. This also appears to be inconsistent with the claimed invention.

Claim Rejections - 35 USC § 112

12. Claims 41 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claims 41 and 58 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the means and method step for applying an electrostatic potential to the grid located in the drift space to cause electron beamlet formation as set forth at page 4 of the specification and is required for the lens array to function.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David A Vanore
Patent Examiner
Art Unit 2881

3/2/06

dav